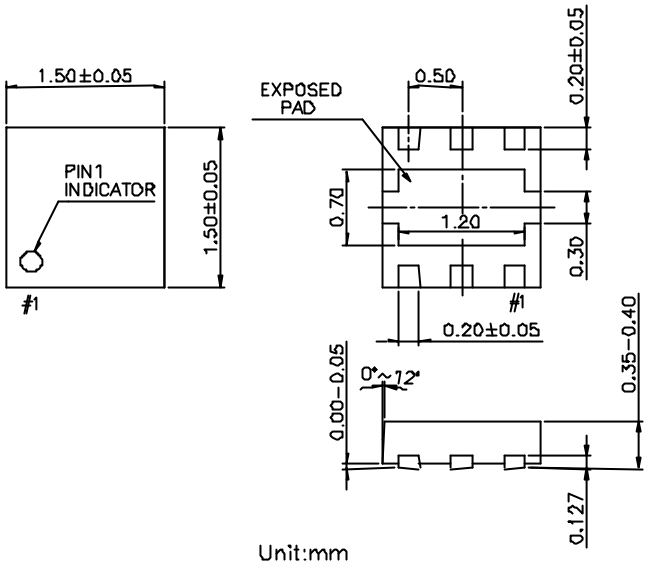
Features

- **Low Insertion Loss:** 0.9 dB @ 2.50 GHz
  1.2 dB @ 5.85 GHz
- **Isolation:** 30.0 dB @ 2.50 GHz
  22.0 dB @ 5.85 GHz
- **Low DC Power Consumption**
- **Miniature USON6L (1.5x1.5x0.4 mm)**
- **Using Lead (Pb) free materials with RoHS compliant**
- **PHEMT process**

USON6L (1.5X1.5X0.4 mm)



Description

The HWS514 is a GaAs PHEMT MMIC DPDT switch operating at 0.5-6 GHz in a low cost miniature USON6L (1.5x1.5x0.4 mm) plastic lead (Pb) free package. The HWS514 features low insertion loss and high isolation with very low DC power consumption. This switch can be used in IEEE 802.11a/b/g WLAN systems for combination of transmit/receive and antenna diversity functions.

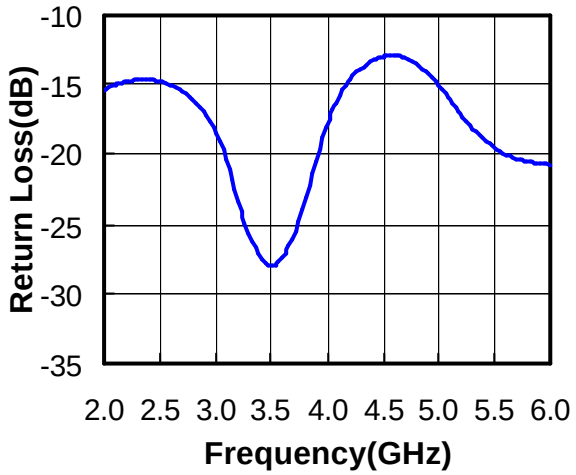
Electrical Specifications at 25°C with 0, +3V Control Voltages

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.10-6.00 GHz 2.40-2.50 GHz 5.15-5.85 GHz		1.2 0.9 1.2	 1.1 1.4	dB dB dB
Isolation	0.10-6.00 GHz 2.40-2.50 GHz 5.15-5.85 GHz	 27.0 18.0	20.0 30.0 22.0		dB dB dB
Return Loss	0.10-6.00 GHz 2.40-2.50 GHz 5.15-5.85 GHz		13 15 15		dB dB dB
Input Power for One dB Compression	2.00-6.00 GHz		33		dBm
Control Current			5	200	uA

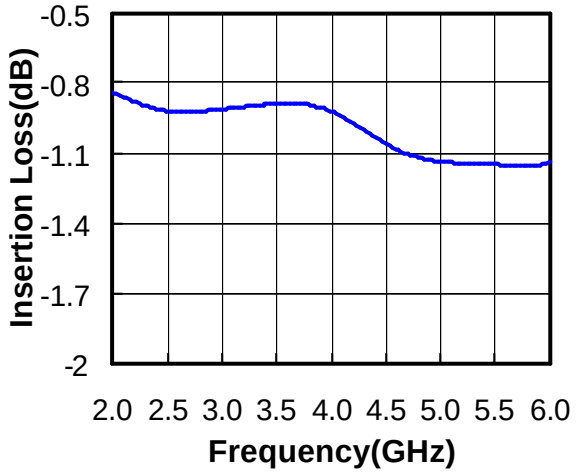
Note: All measurements made in a 50 ohm system with 0/+3.0V control voltages, unless otherwise specified.

Typical Performance Data with 8pF Capacitors @ +25°C

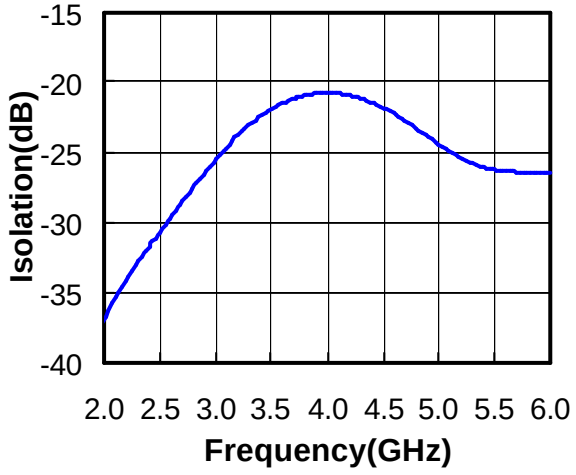
Return Loss vs. Frequency



Insertion Loss vs. Frequency



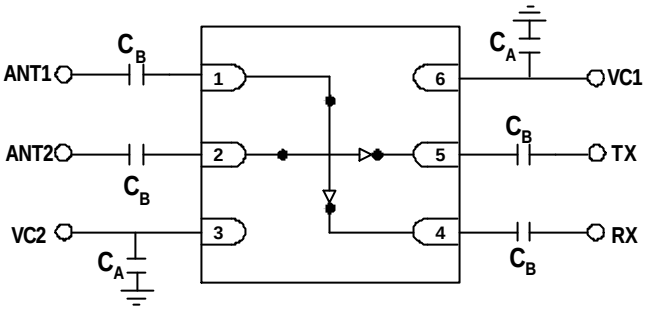
Isolation vs. Frequency



Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+34 dBm @ +3V
Control Voltage	+6V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

Pin Out (Top View)



Note:
1. DC blocking capacitors C_B=8pF are required on all RF ports.
2. RF by-pass capacitors C_A=8pF.
3. Exposed pad in the bottom must be connected to ground by via holes.
4. TX and RX ports can be used interchangeably.

Logic Table for Switch On-Path

State	VC1	VC2	ANT1	ANT2
1	0	1	TX	RX
2	1	0	RX	TX

‘ 1’ = +3V to +5V
‘0’ = 0V to +0.2V